Properties of Numbers

February 22/23, 2017

Mr. Collin

Announcements

- I will not be available after school next week
- Tests will be returned tomorrow

Test Review

- Let's go over some of the questions that people had the most difficulty with

Properties of Numbers

- What happens when I change the order of numbers that are added together?
- How about multiplication?
- How about subtraction?
- How about division?

Commutative Property

- The **commutative property of addition** means that if I add numbers, it does not matter what order they are in
- The **commutative property of multiplication** says the same thing about multiplying numbers

How About More Than Two?

- Let's say I want to add a long string of numbers
  - Does it matter what order I add them?
- Does this property work for subtraction, multiplication, and division?

Associative Property

- The associative property of addition says that if I am adding several numbers together, I can group them any way I want
  - e.g., (a + b) + c = a + (b + c)
- The associative property of multiplication says the same about multiplication

Special Numbers

- What happens if I add zero to a number?
- What do I have to multiply a number by to make it not change?

Identity Properties

- The additive identity property:

$$x + 0 = x$$

- The multiplicative identity property:

$$x \cdot 1 = x$$

Last One!

- What happens if I multiply a number by zero?
- The multiplicative property of zero:

$$x \cdot 0 = 0$$

Basketball Review

- I will put you in teams of three or four
- You will need a whiteboard, marker, and cloth
- No calculators!

Round One

Evaluate each expression if a = 4, b = 10, and c = –5:

1) $3a - c$

2) $(a + c)^2$

3) ab

4) $\frac{b}{c}$

1) 17 2) 1 3) 40 4) –2

Round Two

Write the first three terms of each sequence if given the expression:

1) $2n + 3$

5, 7, 9

2) $4n - 3$

3) $10 - n$

4) $\frac{1}{2}n + 4$

1) 5, 7, 9

2) 1, 5, 9

3) 9, 8, 7

4) 4½, 5, 5½

Round Three

Write an expression in the form ?n ± ?
For each sequence below:

1) 9, 12, 15, 18, …

2) 8, 10, 12, 14, …

3) 2, 9, 16, 23, …

4) 14, 9, 4, –1, …

1) 3n + 6

2) 2n + 6

3) 7n – 5

4) –5n + 19

Round Four

Identify which property is shown in each example below:

1) $3 + n = n + 3$

2) $5 \cdot 7 \cdot 4 \cdot 0 = 0$

3) $(a+b)+c=a+(b+c)$

4) $q + 0 = q$

1) Comm. Prop. Of Add.
2) Mult. Prop. Of Zero
3) Assoc. Prop. Of Add.
4) Add. Ident. Property

Using Expressions

February 24, 2017

Mr. Collin

Warmup

Identify the property shown:

1) $5 + 7 + 19 = 19 + 5 + 7$
2) $3 \cdot (6 \cdot 4) = (3 \cdot 6) \cdot 4$
3) $x + y + 0 = x + y$
4) $1w = w$
5) $a + (b + c) + d = (a + b) + (c + d)$

Trade and Grade

- If you received a stamp, you will trade your homework with the person sitting next to you (or someone else near you)
- When you get another person's homework, write your name in the "Corrected By" line at the bottom

Trade and Grade

1) Additive Identity Property
2) Commutative Property of Addition
3) Associative Property of Addition
4) Multiplicative Identity Property
5) Associative Property of Multiplication
6) Multiplicative Property of Zero
7) Commutative Property of Multiplication

Trade and Grade

8) $m + 26$

9) $21k$

10) $32q$

11) $r + 19$

12) $27 + d$

13) $54x$

Trade and Grade

- If seven or more answers are correct and there is a stamp on the page, write "4" in the score box
- If six or fewer answers are correct, then write "2" in the score box

Review of Sequences

- Let's review how to create an expression for a sequence

7, 10, 13, 16, 19, ...

$3n+4$

Now You Try

Write an expression for each sequence shown:

1) 8, 10, 12, 14, 16, … $2n+6$

2) 3, 7, 11, 15, 19, … $4n-1$

3) 10, 15, 20, 25, 30, … $5n+5$